

## **Reading Standards for Literature**

The following standards offer a focus for instruction each year and help ensure that students gain adequate exposure to a range of texts and tasks. Rigor is also infused through the requirement that students read increasingly complex texts through the grades. *Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.*

### **Key Ideas and Details**

1. Ask and answer questions about key details in a text.
2. a. Retell stories, including key details.  
b. Recognize and understand the central message or lesson.
3. Describe characters, settings, and major events in a story, using key details.

### **Craft and Structure**

4. Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.
5. Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types.
6. Identify who is telling the story at various points in a text.

### **Integration of Knowledge and Ideas**

7. Use illustrations and details in a story to describe its characters, setting, or events.
8. (Not applicable to literature)
9. Compare and contrast the adventures and experiences of characters in stories.

### **Range of Reading and Level of Text Complexity**

10. With prompting and support, read prose and poetry of appropriate complexity for grade 1.

## **Reading Standards for Informational Text**

### **Key Ideas and Details**

1. Ask and answer questions about key details in a text.
2. Identify the main topic and retell key details of a text.
3. Describe the connection between two individuals, events, ideas, or pieces of information in a text.

### **Craft and Structure**

4. Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
5. Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
6. Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

### **Integration of Knowledge and Ideas**

7. Use the illustrations and details in a text to describe its key ideas.
8. Identify the reasons an author gives to support points in a text.
9. Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).

### **Range of Reading and Level of Text Complexity**

10. With prompting and support read informational texts appropriately complex for grade 1.

## Reading Standards for Foundational Skills

These standards are directed toward fostering students' understanding and working knowledge of concepts of print, the alphabetic principle, and other basic conventions of the English writing system. These foundational skills are not an end in and of themselves; rather, they are necessary and important components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines. Instruction should be differentiated: good readers will need much less practice with these concepts than struggling readers will. The point is to teach students what they need to learn and not what they already know— to discern when particular children or activities warrant more or less attention.

### Print Concepts

1. Demonstrate understanding of the organization and basic features of print.
  - a. Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).

### Phonological Awareness

2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes).
  - a. Distinguish long from short vowel sounds in spoken single-syllable words.
  - b. Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.
  - c. Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.
  - d. Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).

### Phonics and Word Recognition

3. Know and apply grade-level phonics and word analysis skills in decoding words.
  - a. Know the spelling-sound correspondences for common consonant digraphs.
  - b. Decode regularly spelled one-syllable words.
  - c. Know final -e and common vowel team conventions for representing long vowel sounds.
  - d. Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word.
  - e. Decode two-syllable words following basic patterns by breaking the words into syllables.
  - f. Read words with inflectional endings.
  - g. Recognize and read grade-appropriate irregularly spelled words.

### Fluency

4. Read with sufficient accuracy and fluency to support comprehension.
  - a. Read on-level text<sup>1</sup> with purpose and understanding.
  - b. Read on-level text<sup>2</sup> orally with accuracy, appropriate rate, and expression on successive readings.
  - c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

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<sup>1</sup> "On-level text" means grade level text.

<sup>2</sup> "On-level text" means grade level text.

## Writing Standards

The following standards offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. Each year in their writing, students should demonstrate increasing sophistication in all aspects of language use, from vocabulary and syntax to the development and organization of ideas, and they should address increasingly demanding content and sources. *Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.*

### Text Types and Purposes

1. Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.
2. Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
3. Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.

### Production and Distribution of Writing

4. Begins in grade 3.
5. With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.
6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

### Research to Build and Present Knowledge

7. Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions).
8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
9. Begins in grade 4.

### Range of Writing

10. Begins in grade 3.

## Speaking and Listening Standards

The following standards offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. *Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.*

### Comprehension and Collaboration

1. Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
  - a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
  - b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
  - c. Ask questions to clear up any confusion about the topics and texts under discussion.
2. Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

3. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

**Presentation of Knowledge and Ideas**

4. Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
6. Produce complete sentences when appropriate to task, audience, and situation.

**Language Standards**

The following standards for grades offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. *Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.*

**Conventions of Standard English**

1. Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.
  - a. Legibly print all upper- and lowercase letters.
  - b. Use common, proper, and possessive nouns.
  - c. Use singular and plural nouns with matching verbs in basic sentences (e.g., He hops; We hop).
  - d. Use personal and possessive pronouns (e.g., I, me, my; they, them, their).
  - e. Use verbs to convey a sense of past, present, and future (e.g., Yesterday I walked home; Today I walk home; Tomorrow I will walk home).
  - f. Use frequently occurring adjectives.
  - g. Use frequently occurring conjunctions (e.g., and, but, or, so, because).
  - h. Use determiners (e.g., articles, demonstratives).
  - i. Use frequently occurring prepositions (e.g., during, beyond, toward).
  - j. Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to prompts.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
  - a. Capitalize dates and names of people.
  - b. Use end punctuation for sentences.
  - c. Use commas in dates and to separate single words in a series.
  - d. Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words.
  - e. Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions.

**Knowledge of Language**

3. Begins in grade 2.

**Vocabulary Acquisition and Use**

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 1 reading and content, choosing flexibly from an array of strategies.
  - a. Use sentence-level context as a clue to the meaning of a word or phrase.
  - b. Use knowledge of frequently occurring affixes (prefixes and suffixes) to interpret the meaning of a word.
  - c. Identify frequently occurring root words (e.g., look) and their inflectional forms (e.g., looks, looked, looking).
5. With guidance and support from adults, demonstrate understanding of word relationships and nuances in

word meanings.

- a. Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.
  - b. Define words by category and by one or more key attributes (e.g., a duck is a bird that swims; a tiger is a large cat with stripes).
  - c. Identify real-life connections between words and their use (e.g., note places at home that are cozy).
  - d. Distinguish shades of meaning among verbs differing in manner (e.g., look, peek, glance, stare, glare, scowl) and adjectives differing in intensity (e.g., large, gigantic) by defining or choosing them or by acting out the meanings.
6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., because).

## Mathematics | Grade 1

[Teachers Companion Documents.zip](#)

### Grade Level Overview

(1) Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., “making tens”) to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.

(2) Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.

(3) Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement.<sup>1</sup>

(4) Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

### Operations and Algebraic Thinking

1.OA

#### A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem).<sup>2</sup>
2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

#### B. Understand and apply properties of operations and the relationship between addition and subtraction.

3. Apply properties of operations to add and subtract.<sup>3</sup> *Examples: If  $8 + 3 = 11$  is known, then  $3 + 8 = 11$  is also known. (Commutative property of addition.) To add  $2 + 6 + 4$ , the second two numbers can be added to make a ten, so  $2 + 6 + 4 = 2 + 10 = 12$ . (Associative property of addition.)*
4. Understand subtraction as an unknown-addend problem. *For example, subtract  $10 - 8$  by finding the number that makes 10 when added to 8.*

#### C. Add and subtract within 20.

<sup>1</sup> Students should apply the principle of transitivity of measurement to make indirect comparisons, but they need not use this technical term.

<sup>2</sup> See Glossary, Table 1.

<sup>3</sup> Students need not use formal terms for these properties.

5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g.,  $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g.,  $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that  $8 + 4 = 12$ , one knows  $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding  $6 + 7$  by creating the known equivalent  $6 + 6 + 1 = 12 + 1 = 13$ ).

**D. Work with addition and subtraction equations.**

7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false?  $6 = 6$ ,  $7 = 8 - 1$ ,  $5 + 2 = 2 + 5$ ,  $4 + 1 = 5 + 2$ .*
8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations  $8 + ? = 11$ ,  $5 = \square - 3$ ,  $6 + 6 = \square$ .*

**Number and Operations in Base Ten**

**1.NBT**

**A. Extend the counting sequence.**

1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

**B. Understand place value.**

2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
  - a. 10 can be thought of as a bundle of ten ones—called a “ten.”
  - b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
  - c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols  $>$ ,  $=$ , and  $<$ .

**C. Use place value understanding and properties of operations to add and subtract.**

4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10.
  - a. Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a number sentence; justify the reasoning used with a written explanation.
  - b. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
6. Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.



## Measurement and Data

## 1.MD

### A. Measure lengths indirectly and by iterating length units.

1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.
2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

### B. Tell and write time.

3. Tell and write time in hours and half-hours using analog and digital clocks.

### C. Represent and interpret data.

4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

### D. Work with money.

5. Determine the value of a collection of coins up to 50 cents. (Pennies, nickels, dimes, and quarters in isolation; not to include a combination of different coins.)

## Geometry

## 1.G

### A. Reason with shapes and their attributes.

1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes that possess defining attributes.
2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) and three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.<sup>4</sup>
3. Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

<sup>4</sup> Students do not need to learn formal names such as “right rectangular prism.”



**GRADE 1 Life in the Great State of Louisiana**

The focus in grade 1 is helping students acquire knowledge regarding their place in the local community and in Louisiana. First graders will gain a deeper sense of their role as citizens in a democratic society as they develop an awareness of their basic rights and responsibilities, including the laws designed to protect them. Students will continue to develop a sense of time and place as they increase their understanding of the past, present, and future through the study of Louisiana’s rich history and culture.

**HISTORY**

- 1.1 Create a chronological sequence of events using appropriate vocabulary.
- 1.2 Differentiate between primary and secondary sources. For example:
  - a. Primary sources: letters, diaries, autobiographies, speeches, interviews
  - b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies
- 1.3 Select and use appropriate evidence from primary and secondary sources to support claims.
- 1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning.
- 1.5 Compare life in Louisiana in the past to life today.
- 1.6 Describe how past events can affect the present.
- 1.7 Compare the lives of Louisianans today in urban, suburban, and rural parishes.
- 1.8 Identify examples of Louisiana's culture, including:
  - a. State and nationally designated holidays: New Year’s Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington’s Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day
  - b. Music: Cajun, jazz, zydeco
  - c. Languages: French, Spanish, Native languages (e.g., Atakpan, Caddo, Choctaw)
  - d. Architecture: St. Louis Cathedral, The Cabildo, State Capitol, Louisiana Superdome, Strand Theater, Sports Hall of Fame, The National WWII Museum
  - e. Traditions: lagniappe, second line parades, king cake, red beans and rice on Mondays
  - f. Cuisine: jambalaya, gumbo, etouffee, bread pudding, meat pies, tamales
  - g. Symbols: Louisiana State flag, brown pelican, magnolia tree, black bear
  - h. Individuals who have made significant contributions to Louisiana’s artistic heritage.
- 1.9 Identify cultural groups that influenced Louisiana, including Acadians, Africans, Canary Islanders, French, Germans, Haitians, Native Americans, Asian Americans, French, and Spanish.

**CIVICS**

- 1.10 Describe the purpose of the state government of Louisiana.
- 1.11 Identify Louisiana as a unique state among fifty, and as a part of the United States.

- 1.12 Identify each of the branches of the state government of Louisiana.
- 1.13 Describe examples of rules and laws in Louisiana.
- 1.14 Describe civic virtues including voting, running for office, serving on committees, and volunteering.
- 1.15 Describe the importance of fairness, responsibility, respect, and hard work. For example:
  - a. Taking care of personal belongings and respecting the property of others.
  - b. Following rules and recognizing consequences of breaking rules.
  - c. Taking responsibility for assigned duties.
- 1.16 Identify leaders at various levels of Louisiana State government, and explain their roles and responsibilities.

## **ECONOMICS**

- 1.17 Differentiate between producers and consumers.
- 1.18 Identify examples of an economic cost or benefit of a decision or event.
- 1.19 Describe how different public and private jobs help Louisianans. For example:
  - a. Public: firefighters keeping people and their property safe
  - b. Private: nurses caring for sick or injured people
- 1.20 Explain why and how goods and services are produced and traded.
- 1.21 Describe how scarcity requires people to make choices.
- 1.22 Identify and describe which goods and services are produced in different places and regions in Louisiana.
- 1.23 Describe the importance of natural resources in Louisiana, including timber, seafood, and oil.

## **GEOGRAPHY**

- 1.24 Create and use maps or models with cardinal directions, keys, and scale.
- 1.25 Identify where Louisiana is within the United States and on the globe.
- 1.26 Differentiate between the town, parish, state, and country in which the student lives on a political map.
- 1.27 Identify places, regions, and landforms in Louisiana, and describe their relative locations including the cultural regions: North Louisiana, Central Louisiana, Southwest Louisiana, Florida Parishes, Acadiana, Bayou Region, and Greater New Orleans.
- 1.28 Describe the physical characteristics of various regions of Louisiana, including bayous, swamps, floodplains, forests, and farmland.
- 1.29 Describe ways people in Louisiana change their environment to meet their needs, including the construction of bridges and levees.
- 1.30 Explain how Louisianans have successfully met the challenges posed by natural disasters.
- 1.31 Explain how and why people and goods move from place to place.
- 1.32 Explain how the physical landscape of Louisiana affected the settlement of Native Americans and early settlers.

## WAVES AND THEIR APPLICATIONS

<b>Performance Expectation</b>	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
<b>Clarification Statement</b>	Examples of vibrating materials that make sound could include tuning forks or plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound or holding an object near a vibrating tuning fork.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> <li>Asking questions and defining problems</li> <li>Developing and using models</li> <li><b>3. Planning and carrying out investigations:</b> Planning and carrying out investigations to answer questions (science) or test solutions (engineering) to problems in K-2 build on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. <ul style="list-style-type: none"> <li>Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question.</li> </ul> </li> <li>Analyzing and interpreting data</li> <li>Using mathematics and computational thinking</li> <li>Constructing explanations and designing solutions</li> <li>Engaging in argument from evidence</li> <li>Obtaining, evaluating, and communicating information</li> </ol>	<p><b>WAVE PROPERTIES</b> Sound can make matter vibrate, and vibrating matter can make sound. (LE.PS4A.a)</p>	<p><b>CAUSE AND EFFECT</b> Simple tests can be designed to gather evidence to support or refute student ideas about causes.</p>

## WAVES AND THEIR APPLICATIONS

<p><b>Performance Expectation</b></p>	<p>Make observations to construct an evidence-based account that objects can be seen only when illuminated.</p>
<p><b>Clarification Statement</b></p>	<p>Examples of observations could include those made in a completely dark room, a pinhole box, or a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light. This can be explored with light tables, 3-way mirrors, overhead projectors or flashlights.</p>

<p><b>Science &amp; Engineering Practices</b></p>	<p><b>Disciplinary Core Ideas</b></p>	<p><b>Crosscutting Concepts</b></p>
<ol style="list-style-type: none"> <li>1. Asking questions and defining problems</li> <li>2. Developing and using models</li> <li>3. Planning and carrying out investigations</li> <li>4. Analyzing and interpreting data</li> <li>5. Using mathematics and computational thinking</li> <li><b>6. Constructing explanations and designing solutions:</b> Constructing explanations (science) and designing solutions (engineering) in K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. <ul style="list-style-type: none"> <li>• Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.</li> </ul> </li> <li>7. Engaging in argument from evidence</li> <li>8. Obtaining, evaluating, and communicating information</li> </ol>	<p><b>ELECTROMAGNETIC RADIATION</b> Objects can be seen if light is available to illuminate them or if they give off their own light. Some objects give off their own light. (LE.PS4B.a)</p>	<p><b>CAUSE AND EFFECT</b> Events have causes that generate observable patterns.</p>

## WAVES AND THEIR APPLICATIONS

<b>Performance Expectation</b>	Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.
<b>Clarification Statement</b>	Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), or reflective (such as a mirror).

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> <li>1. Asking questions and defining problems</li> <li>2. Developing and using models</li> <li><b>3. Planning and carrying out investigations:</b> Planning and carrying out investigations to answer questions (science) or test solutions (engineering) to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.           <ul style="list-style-type: none"> <li>• Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.</li> </ul> </li> <li>4. Analyzing and interpreting data</li> <li>5. Using mathematics and computational thinking</li> <li>6. Constructing explanations and designing solutions</li> <li>7. Engaging in argument from evidence</li> <li>8. Obtaining, evaluating, and communicating information</li> </ol>	<p><b>ELECTROMAGNETIC RADIATION</b></p> <p>Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.) (LE.PS4B.b)</p>	<p><b>CAUSE AND EFFECT</b></p> <p>Simple tests can be designed to gather evidence to support or refute student ideas about causes.</p>

## WAVES AND THEIR APPLICATIONS

<p><b>Performance Expectation</b></p>	<p>Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.</p>
<p><b>Clarification Statement</b></p>	<p>Examples of devices could include a light source to send signals, paper cup and string “telephones,” or a pattern of drumbeats.</p>

<p><b>Science &amp; Engineering Practices</b></p>	<p><b>Disciplinary Core Ideas</b></p>	<p><b>Crosscutting Concepts</b></p>
<ol style="list-style-type: none"> <li>1. Asking questions and defining problems</li> <li>2. Developing and using models</li> <li>3. Planning and carrying out investigations</li> <li>4. Analyzing and interpreting data</li> <li>5. Using mathematics and computational thinking</li> <li><b>6. Constructing explanations and designing solutions:</b> Constructing explanations (science) and designing solutions (engineering) in K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. <ul style="list-style-type: none"> <li>• Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.</li> </ul> </li> <li>7. Engaging in argument from evidence</li> <li>8. Obtaining, evaluating, and communicating information</li> </ol>	<p><b>INFORMATION TECHNOLOGIES AND INSTRUMENTATION</b> People also use a variety of devices to communicate (send and receive information) over long distances. (LE.PS4C.a)</p> <p><b>DEVELOPING POSSIBLE SOLUTIONS</b> A situation that people want to change or create can be approached as a problem to be solved through engineering. (LE.ETS1A.a)</p>	<p><b>SYSTEMS AND SYSTEM MODELS</b> Systems in the natural and designed world have parts that work together.</p>

## FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

<p><b>Performance Expectation</b></p>	<p>Use tools and materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.</p>
<p><b>Clarification Statement</b></p>	<p>Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells or animal scales; stabilizing structures by mimicking animal tails or roots on plants; keeping out intruders by mimicking thorns on branches or animal quills; and detecting intruders by mimicking eyes or ears.</p>

<p><b>Science &amp; Engineering Practices</b></p>	<p><b>Disciplinary Core Ideas</b></p>	<p><b>Crosscutting Concepts</b></p>
<ol style="list-style-type: none"> <li>Asking questions and defining problems</li> <li>Developing and using models</li> <li>Planning and carrying out investigations</li> <li>Analyzing and interpreting data</li> <li>Using mathematics and computational thinking</li> <li><b>Constructing explanations and designing solutions:</b> Constructing explanations (science) and designing solutions (engineering) in K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. <ul style="list-style-type: none"> <li>Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.</li> </ul> </li> <li>Engaging in argument from evidence</li> <li>Obtaining, evaluating, and communicating information</li> </ol>	<p><b>STRUCTURE AND FUNCTION</b> All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (LE.LS1A.a)</p> <p><b>INFORMATION PROCESSING</b> Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (LE.LS1D.a)</p> <p><b>DEVELOPING POSSIBLE SOLUTIONS</b> Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for solutions to a problem. (LE.ETS1B.a)</p> <p><b>OPTIMIZING THE DESIGN SOLUTION</b> Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (LE.ETS1C.a)</p>	<p><b>STRUCTURE AND FUNCTION</b> The shape and stability of structures of natural and designed objects are related to their function(s).</p>



## FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

<p><b>Performance Expectation</b></p>	<p>Read grade-appropriate texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.</p>
<p><b>Clarification Statement</b></p>	<p>Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).</p>

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> <li>1. Asking questions and defining problems</li> <li>2. Developing and using models</li> <li>3. Planning and carrying out investigations</li> <li>4. Analyzing and interpreting data</li> <li>5. Using mathematics and computational thinking</li> <li>6. Constructing explanations and designing solutions</li> <li>7. Engaging in argument from evidence</li> <li>8. <b>Obtaining, evaluating, and communicating information:</b> Obtaining, evaluating, and communicating information in K-2 builds on prior experiences and uses observations and texts to communicate new information.           <ul style="list-style-type: none"> <li>• Read grade-appropriate texts and/or use media to obtain scientific and/or technical information to determine patterns in and/or evidence about the natural and designed world(s).</li> </ul> </li> </ol>	<p><b>GROWTH AND DEVELOPMENT OF ORGANISMS</b>            Adult plants and animals can have offspring. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (LE.LS1B.a)</p>	<p><b>PATTERNS</b>            Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>

## HEREDITY: INHERITANCE AND VARIATION OF TRAITS

<p><b>Performance Expectation</b></p>	<p>Make observations to construct an evidence-based account that young plants and animals are similar, but not exactly like, their parents.</p>
<p><b>Clarification Statement</b></p>	<p>Examples of observations could include: leaves from the same kind of plant are similar in shape but can differ in size, or a particular breed of dog looks like its parents but is not exactly the same. Examples of patterns could include features that plants or animals share.</p>

<p><b>Science &amp; Engineering Practices</b></p>	<p><b>Disciplinary Core Ideas</b></p>	<p><b>Crosscutting Concepts</b></p>
<ol style="list-style-type: none"> <li>1. Asking questions and defining problems</li> <li>2. Developing and using models</li> <li>3. Planning and carrying out investigations</li> <li>4. Analyzing and interpreting data</li> <li>5. Using mathematics and computational thinking</li> <li><b>6. Constructing explanations and designing solutions:</b>            Constructing explanations (science) and designing solutions (engineering) in K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.           <ul style="list-style-type: none"> <li>• Make observations to construct an evidence-based account for natural phenomena.</li> </ul> </li> <li>7. Engaging in argument from evidence</li> <li>8. Obtaining, evaluating, and communicating information</li> </ol>	<p><b>INHERITANCE OF TRAITS</b>            Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly like, their parents. (LE.LS3A.a)</p> <p><b>VARIATION OF TRAITS</b>            Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (LE.LS3B.a)</p>	<p><b>PATTERNS</b>            Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>

## EARTH'S PLACE IN THE UNIVERSE

<p><b>Performance Expectation</b></p>	<p>Use observations of the sun, moon, and stars to describe patterns that can be predicted.</p>
<p><b>Clarification Statement</b></p>	<p>Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.</p>

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> <li>1. Asking questions and defining problems</li> <li>2. Developing and using models</li> <li>3. Planning and carrying out investigations</li> <li>4. <b>Analyzing and interpreting data:</b> Analyzing and interpreting data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations. <ul style="list-style-type: none"> <li>• Use observations to describe patterns in the natural world in order to answer scientific questions.</li> </ul> </li> <li>5. Using mathematics and computational thinking</li> <li>6. Constructing explanations and designing solutions</li> <li>7. Engaging in argument from evidence</li> <li>8. Obtaining, evaluating, and communicating information</li> </ol>	<p><b>THE UNIVERSE AND ITS STARS</b> Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. (LE.ESS1A.a)</p>	<p><b>PATTERNS</b> Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>

## EARTH'S PLACE IN THE UNIVERSE

<b>Performance Expectation</b>	Make observations at different times of year to relate the amount of daylight to the time of year.
<b>Clarification Statement</b>	Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring, fall, or summer.

<b>Science &amp; Engineering Practices</b>	<b>Disciplinary Core Ideas</b>	<b>Crosscutting Concepts</b>
<ol style="list-style-type: none"> <li>Asking questions and defining problems</li> <li>Developing and using models</li> <li><b>3. Planning and carrying out investigations:</b> Planning and carrying out investigations to answer questions or test solutions to problems in K-2 build on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. <ul style="list-style-type: none"> <li>Make observations to collect data that can be used to make comparisons.</li> </ul> </li> <li>Analyzing and interpreting data</li> <li>Using mathematics and computational thinking</li> <li>Constructing explanations and designing solutions</li> <li>Engaging in argument from evidence</li> <li>Obtaining, evaluating, and communicating information</li> </ol>	<p><b>EARTH AND THE SOLAR SYSTEM</b> Seasonal patterns of sunrise and sunset can be observed, described, and predicted. (LE.ESS1B.a)</p>	<p><b>PATTERNS</b> Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>